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Expression characteristics and prognostic significances of MUC1 and MUC4 in non-small cell lung carcinoma

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MUC1 and MUC4 are high molecular weight membrane-bound glycoprotein that can be detected in normal and malignant epithelial cells. Their expression has been related to the prognosis of some malignant epithelial tumors. However, in lung cancer, little is known about the relationship between the expression of epithelial mucin (MUCs) and clinicopathological parameters in non-small cell lung carcinoma (NSCLC). In this study, we evaluated the correlation between MUC1 and MUC4 expression and histologic subtypes. We also investigated the correlation between high expression of MUC1 and MUC4 and clinical prognostic significance in the series. We performed the immunohistochemical stains for MUC1 and MUC4 on formalin-fixed, paraffin-embedded tissue samples from 165 cases of NSCLC arranged in a high-density tissue microarray. We found a significant correlation between MUC1 and MUC4 expression and histologic subtypes ($p<0.05$). High levels of expression for MUC1 were more characteristic of adenocarcinoma. Low levels of expression for MUC1 and MUC4 were more characteristic of squamous cell carcinoma. There was a significant association between increased MUC1 expression (extensiveness 3+) and shortened survival ($p=0.005$). Reversely, the high levels of MUC4 expression gave a trend toward longer patient survival ($p=0.127$). In conclusion, MUC1 and MUC4 expression are associated with specific histologic subtypes. There was different prognostic significance between MUC1 and MUC4 in NSCLC.

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Long term prognosis after resection for non-small cell lung cancer: Single center study

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Background: The current international TNM staging system has been respected as the most important factor for determining patient management and estimating the prognosis of NSCLC patients. To estimate the appropriateness of the present TNM classification, we retrospectively analyzed our data of patients with non-small cell lung cancer.

Methods: A retrospective review of 1479 patients with primary lung cancer treated at Asan Medical Center from June 1989 through December 2004 was performed. There was a 2.8 % hospital mortality during same period and The survival rate was estimated using the Kaplan-Meier method, and the difference in survival was tested by the log-rank test.

Results: There was a 44.6% mortality and a 2.8% hospital mortality in our study. The survival rate for 5-year was 60.1% and for 10-year 43.7%. The 5-year survival rates by pathological stage were as follows: 76.3% for IA (n=234), 71.3% for IB (n=480), 62.8% for IIA (n=42), 55.7% for IIB (n=273), 38.3 for IIIA (n=347), 45.3% for IIIB (n=67), and 54.6% for IV (n=20). The difference in prognosis between stage IIB and IIIA was significant ($P < .001$). There were no significant difference between IA and IB, between IB and IIA, between IIA and IIB, between IIIA and IIIB, or between IIIB and IV. The 5-year recurrence-free survival rates by pathological stage were as follows: 63.6% for IA, 58.7% for IB, 52.3% for IIA, 48.3% for IIB, 26.5% for IIIA, 40.0% for IIIB, and 30.0% for IV. We compared the survival rate of patients underwent surgical resection between 1989 and 2000 (early period, n=737) and with between 2001 and 2004 (late period, n=742). The 5-year survival rate of the late period was better than that of the early period (64.6% vs 56.3%, $P = .002$).

Conclusions: The present TNM staging system seems to characterize patient prognosis reliably. The 5-year survival of lung cancer patients in the late period was significantly improved.

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Clinical Characteristics Of Sarcomatoid Carcinoma Of The Lung

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Background: Carcinomas with sarcoma-like features can occur in the lung. These primary non-small cell lung cancers have either a biphasic growth pattern with admixtures of carcinoma and sarcomatoid components or an exclusively sarcomatoid component with epithelial differentiation demonstrated by immunohistochemistry or electron microscopy and have been named as pleomorphic carcinoma, giant cell carcinoma, spindle cell carcinoma or carcinosarcoma. Currently "sarcomatoid carcinoma" is accepted term for these tumors. It has been reported that sarcomatoid carcinoma has a poorer prognosis than other conventional non-small cell lung cancers.

Methods: We categorized primary non-small cell lung cancers, which had following features as "sarcomatoid carcinoma": 1) tumors with concurrent presence of carcinoma and sarcomatoid components, or 2) tumors with only sarcomatoid element and positive immunoreactivity for anti-cytokeratin antibody. 937 primary non-small cell lung cancers were operated at the National Cancer Center in South Korea from 2001 to 2006. Of these, 39 cases were diagnosed as sarcomatoid carcinoma and classified as group A and the others classified as group B. We reviewed the clinicopathologic characteristics of the sarcomatoid carcinoma.

Result: There were no statistical differences in sex, age, stage and preoperative or postoperative treatment between two groups. 19 cases were recurred in sarcomatoid carcinoma group (19/39 48.7 %) and 245 cases were recurred in the group B (245/898 27.3 %). The group A has shorter time to recurrence(107 day vs. 315 $p=0.007$) and lower 5 year disease free survival rate (46.94% vs 59.84% $p=0.0037$) than group B. Also sarcomatoid carcinoma group has lower 5 year survival rate than group B(49.95% vs 58.68% $p=0.0114$). In the Cox proportional hazard model, the cell type of sarcomatoid carcinoma is risk factor of lower survival rate and lower disease free survival rate.

Conclusion: The sarcomatoid carcinomas of the lung tended show a higher recurrence rate and shorter disease free interval than other non-small cell lung cancers. The effort may be needed to make an accurate preoperative diagnosis to apply multimodality treatment to improve the prognosis of the sarcomatoid carcinomas.